

Executive Summary: Key Draft Recommendations

Manure Management Task Force

December 1, 2005

This is a summary and distillation of the key draft recommendations prepared by the Manure Management Task Force. The Secretaries of the Department of Natural Resources and the Department of Agriculture, Trade and Consumer Protection appointed a task force of 16 members representing a broad spectrum of interests to provide findings and recommendations to address manure runoff events. The following key recommendations are drawn from throughout the Draft Findings and Recommendations which follow this summary.

1. Increase use of the following practices to reduce risks related to manure runoff incidents:
 - a. Winter spreading plans for farmers to identify high risk fields that should not receive winter applications of manure.
 - b. Manure hauling procedures to promote safe handling of manure.
 - c. Emergency response plans to contain and clean up manure spills and overflows.The specific mechanisms for implementing these practices may include education, incentives, planning and regulation.
2. Increase implementation of nutrient management plans, with the recognition that . phosphorous-based plans are the most effective means to reduce overall risks. Build support within the agricultural community, environmental, and legislative interests and others to increase funding by \$7-14 million annually for the implementation of nutrient management plans (required by state programs) for livestock operations. Funds should be targeted to areas/approaches that provide maximum benefit in terms of risk reduction and address locally-identified priorities for watersheds and groundwater.
3. Improve our knowledge about manure runoff events and their prevention by:
 - a. Working through Wisconsin Agricultural Stewardship Initiative to develop and maintain a catalogue of research activity and needs, coordinate and help set priorities for research activity, and serve as a clearinghouse to coordinate the interpretation of research findings.
 - b. Pursuing adaptive management approaches to inform and guide research, monitoring, management and policy decisions.
 - c. Improving state agencies data collection, tracking and reporting related to manure runoff events, including improved cooperation between DATCP and DNR that makes better use of the agency's different expertise and protocols.

4. Revitalize information and education efforts through targeted improvements and innovative approaches including:
 - a. Developing a manure spreading advisory system that may take the form of a web-based risk assessment tool to warn farmers about specific weather-related hazards such as predicted rain events, and
 - b. Developing a statewide notification program to alert farmers concerning high risk spreading conditions such as melt periods and dry weather. Different media including radio broadcasts (including daily market reports), websites, and email could be used for making notifications.
5. Strongly encourage counties to develop emergency response systems and farmers to prepare individual emergency response plans to better deal with manure runoff events.
6. Follow current regulatory paths for non-permitted livestock operations on state and local levels to address manure runoff incidents, and evaluate new regulation as follows:
 - a. DATCP should consider developing a statewide certification or licensing program for manure haulers that builds on the certification program operated by the professional manure haulers, giving careful consideration to the scope of requirements imposed, fees or other funding mechanisms for the program, and the class of persons to be regulated (e.g. contract haulers, medium and large livestock operators).
 - b. DATCP should evaluate how farmers can participate in training and education efforts related to a statewide certification or licensing program for manure haulers.
7. Provide funds to compensate owners of wells contaminated by manure runoff events through revisions to DNR's well compensation program.
8. Develop a regional **pilot** program to test the effectiveness of limited enforcement protection and other incentives for farmers that meet standards for superior environmental performance. The regional pilot program will help evaluate:
 - a. The potential conditions that would trigger protection, including criteria regarding protective management practices (beyond a Nutrient Management Plan and Emergency Response Plan) that a farmer must meet to be eligible for limited enforcement and related incentives.
 - b. The nature of the potential protection and incentives that will be afforded farmers, including specifics associated with limited enforcement, reduced liability (which may involve a risk-pooling mechanism), and priority status in securing added technical and financial assistance.
 - c. Ensure that this approach produces adequate public benefit to warrant the protection and incentives provided to farmers.

Draft Findings and Recommendations

Manure Management Task Force

December 1, 2005

General Considerations

Land spreading is the most common method farmers use to dispose of their manure. It is effective in recycling manure, and is fundamental to sound farming. Proper land application requires balancing available land base with animal numbers. However, land application of manure, particularly in winter months, has resulted in acute runoff incidents involving fish kills and well contamination. The Wisconsin Department of Natural Resources documented 52 acute runoff events from July 1, 2004 through June 30, 2005 (see Appendix 1).

Manure runoff from these events entered our lakes and rivers and killed fish. In other cases, land-applied manure found its way into private wells and contaminated drinking water. As a response to those runoff events, the Secretaries of the Department of Agriculture, Trade, and Consumer Protection (DATCP) and the Department of Natural Resources (DNR) convened the Manure Management Task Force to identify solutions to these problems.

It is important to distinguish acute manure runoff incidents, that may impact water resources within hours, from the chronic delivery of nutrients from manure or sources that have water quality impacts over the course of many seasons. Proper manure handling practices can protect water quality but improperly timed or placed manure applications can result in both acute and chronic water quality impacts. Key factors that contribute to the rapid delivery of manure to surface and groundwater in acute events include spreading of liquid manure on frozen or snow covered-ground, manure applications on saturated ground, and spreading manure immediately prior to rain events or snow melts. Factors that lead to chronic delivery of nutrients from land-applied manure and other sources include the soil erosion rates, excessive manure applications, and phosphorous levels in the soil.

In the short-term, the task force agreed that we can reduce risks from manure runoff incidents by increased use of the following practices which address the key factors listed above:

- winter spreading plans for farmers to identify high risk fields that should not receive winter applications of manure.
- manure hauling procedures to promote safe handling of manure.
- emergency response plans to contain and clean up manure spills and overflows.

The specific mechanisms for implementing these practices may include education, incentives, planning and regulation. The task force has not achieved consensus on the specific mechanisms for implementation of these practices.

Nutrient management plans are the best available and most acceptable practice to address manure runoff issues including those related to winter spreading. Phosphorous-based nutrient management plans can be effective in reducing both chronic and acute risks.

In considering alternatives and options, it is critical to strike a balance that protects the environment and the public interests while allowing a climate favorable for our livestock industry to grow and prosper. This requires that we understand the effectiveness, economic impact and feasibility of different proposals. Engaging the agricultural community and the affected public is vital to identifying appropriate solutions, and making progress in addressing water quality concerns related to manure runoff events.

Recommendations

- DATCP and DNR should focus on actions that take advantage of the sustainable practice of land application of manure.
- Farmers should increase the use of winter spreading plans, manure hauling procedures, and emergency response plans to reduce risks related to acute runoff events. Education, incentives, planning or regulation are mechanisms that may be used to implement these basic practices, and the selection of a particular mechanism should be based on its effectiveness, economic impact, feasibility and acceptability. The task force has not achieved consensus on the specific mechanism for implementation of these practices.
- The state should increase implementation of phosphorous-based nutrient management plans that are recognized as the best available and most acceptable practice to reduce acute and chronic runoff risks related to manure applications.
- State agencies should engage the private and public sector in developing and implementing solutions. The agricultural community should become involved in identifying and taking ownership of solutions.

Research, Data Collection, and Monitoring

Ongoing research is essential to finding workable solutions to the problem of manure runoff events. Our leading researchers at the University of Wisconsin, Discovery Farms and Pioneer Farms are conducting experimental and on-farm research to better understand manure transport and other runoff from fields. We are not adequately documenting current research activities and research needs. There is a need for state leadership to coordinate research activities. Our state research agenda could be more focused on key issues related to manure runoff incidents, and could integrate research on acute impacts with research on chronic impacts of nutrients.

Research can take various forms. It may validate specific practices that reduce runoff risks or minimize the impact of runoff events. It can look at new methods and technologies for managing and treating manure. By reducing water usage on farms, for instance, we can reduce the volume of manure that must be spread on land. There are opportunities to reduce and recover phosphorous. Some technologies such as solid separation offer promise. Others such as manure digestion provide related benefits by harnessing energy from manure while controlling odor and destroying pathogens. Social scientists can help clarify how we can most effectively communicate messages about

manure management to farm audiences, and the value of different incentives in changing farmer behavior. Social science research can provide a better understanding of why producers implement practices or corrective actions, identify what barriers stand in the way of implementing new practices, and pinpoint what the most effective delivery methods are to communicate important messages to the agricultural community.

Research can be tightly targeted to address narrow issues or can take a more expansive view to address more complex considerations. Research can fill key gaps in our knowledge about manure runoff incidents including the role of tile lines in transporting manure. It can improve our understanding of funding mechanisms to pay for valuable practices such as nutrient management plans. Watershed research affords us the opportunity to understand manure runoff events on a larger scale, and identify management solutions that effectively address the full dimensions of the issue.

There are distinct benefits of focusing research and development on small scale technologies that are feasible for individual farms (e.g. filter-presses). This approach avoids the complexities of regional approaches such as transportation and pathogen concerns. There is room for regional solutions; however, it appears more productive to focus on small, on-site technologies at this time. We need to evaluate and advance small-scale technologies with promise. There may be a place for manure storage bladders to handle any overflow from permanent storage structures.

It is important to improve the way state agencies collect, track and report data related to manure runoff events. With a more systematic approach to data collection, we would have better information to understand and evaluate runoff events. DATCP and DNR could more effectively collaborate to investigate these events, making use of their different expertise. Also there is a need to create a compilation mechanism such as an annual summary of the data.

Monitoring is related to data collection, and is performed by agencies and citizen volunteers. Monitoring can take different forms, and can be used to develop BMPs or determine their effectiveness, to monitor compliance during an event, and evaluate ambient water quality in lakes and rivers.

Recommendations

- DNR and DATCP should support statewide use of adaptive management, including identifying gaps in information, implementing research and monitoring programs, sharing results, and incorporating the results of research and monitoring into policy and management decisions, as the organizing methodology and philosophy to improve manure management in Wisconsin.
- DATCP and DNR should work through Wisconsin Agricultural Stewardship Initiative to develop and maintain a catalogue of research activity and needs, coordinate and help set priorities for research activity, and serve as a clearinghouse to coordinate the interpretation of research findings.
- DATCP and DNR should play a more active role in coordinating research to address key issues related to manure runoff incidents, provide leadership in identifying and supporting future research including participatory efforts, and provide direction in setting research priorities.

- DATCP and DNR must improve data collection, tracking and reporting of runoff events. They should evaluate the benefits of cooperation in accomplishing these actions.
- DATCP and DNR should explore the potential for using a common process for conducting investigations of manure runoff incidents, and consider using related protocols (e.g., DATCP protocols on investigating pesticide spills/incidents or DNR's Animal Waste Investigators Handbook) as models for investigation.
- Research activity should reflect the full range of needs, and include activities that more effectively translate research into policy, improve our understanding of what works to change farmer behavior, develop and test new technologies including solids separation and reduced water usage on farms, collect more information on transportation issues such as manure hauling costs, evaluate BMP effectiveness including pathogen control, understand how to improve the economic viability of on-farm manure digesters, identify opportunities for marketing compost, and shed light on the role of tile systems in transporting manure.
- Research and other approaches should provide maximum benefits by reducing acute runoff risks while effectively managing risks of chronic delivery of nutrients.
- The state should invest in research and other programs that focus on small-scale, on-farm approaches such as solid separation, storage bladders, and reduced on-farm water usage.
- Research efforts may assist in farm-level targeting of practices, using approaches similar to Wisconsin Buffer Initiative, to provide cost-effective approaches to managing nutrient runoff.
- DNR should develop a methodology for evaluating local and statewide economic costs resulting from manure runoff events, including public trust values of lost resource use for citizens and small business losses.
- Research efforts should continue to examine the environmental impacts of manure runoff events (including impacts from phosphorous and other nutrients, pathogens, ammonia, biochemical oxygen demand, and effects on groundwater) and should study the effectiveness of practices in protecting water quality.
- DATCP and DNR should recognize the importance of social data, and work with the agricultural community, university experts and others to improve the collection of this information, including the benefits and barriers to practice adoption.
- DATCP and DNR should also work with researchers and the agricultural community to develop or use existing models to determine the net cost to farmers for developing and implementing nutrient management plans; monetary incentives should be targeted in accordance with those costs.
- DATCP and DNR should work with local governments, non-profit organizations and others to improve the quality of monitoring activities, including citizen monitoring during and prior to snow melts.

Planning

At different levels, planning is an effective tool to identify resource concerns and develop preventive and other strategies. On the farm, nutrient management plans are the most effective and well accepted tool to manage field application of manure. Under current

law (ATCP 50 and NR 151, Wis. Admin. Code), all operations must have nutrient management plans by 2008 if cost-sharing has been offered. By making cost-share dollars available for nutrient management on livestock and poultry operations, we can increase the number of plans used by farmers, and reduce water quality risks related to land-applied manure. When combined with a conservation plan that identifies high risk fields for winter spreading, a nutrient management plan has enhanced power to reduce acute risks.

At the present available cost-share funding for nutrient management plans is woefully inadequate. Additional revenue sources should be identified, and channeled into effective programs. DATCP has targeted grant funds to cost-share nutrient management plans where there have been manure incidents and the farms are not already required to have plans. There may be other approaches to target funding to ensure that plans are cost-shared where they are most needed. With the addition of new cost-sharing dollars, these points need to be emphasized: farmers should only receive payments to cover actual costs, and farmers have an incentive to better management of nutrients to avoid the costs of purchased fertilizer.

There are more comprehensive approaches to farm planning that include whole farm plans and Environmental Management Systems (EMS). At this scale, these plans enable farmers to make better decisions because they can evaluate relevant information about available resources, alternative solutions, and potential impacts. An EMS is a systematic approach to identify, correct and monitor the environmental performance of a livestock enterprise. An EMS involves a continuous cycle of risk assessment, action planning, implementation, review and improvement to fully integrate environmental responsibility into the business of farming. External audits verify that farmers are doing what they identified in their EMS plans.

Farm planning can reduce a range of environmental risks, including those related to manure runoff incidents. When teamed with a nutrient management plan, an EMS offers a powerful combination to prevent acute and chronic runoff events. State programs can stimulate the use of planning tools such as the EMS approach. For example, an EMS is a good fit with the *Green Tier* program and its emphasis on higher levels of environmental performance. Other incentives need to be considered. State programs might confer a degree of liability protection on a farmer who follows an EMS.

The state develops watershed and other plans to identify water quality concerns in particular areas. State plans that identify Total Maximum Daily Loads (TMDLs), which are required for impaired watersheds, can aid in efforts to target water quality protection.

Recommendations

- DATCP and DNR should work with the agricultural community, environmental interests and others to increase funding by \$7-14 million annually for the implementation of nutrient management plans on livestock operations, building on the DATCP grant program and other models (e.g. the Wisconsin Buffer Initiative) to target financial incentives. Funds should be targeted to areas or using approaches that will provide maximum benefit and address locally-identified priorities for watersheds and groundwater

- DATCP and DNR should work with the private sector to support and expand the use of environmental management systems and other comprehensive planning tools.
- DNR can expand its support of EMSs through the *Green Tier* Program.
- DATCP and DNR should work with others to promote the planning and other mechanisms that reduce spreading of manure in high risk situations.
- DATCP and DNR should work with the private sector to develop incentives such as green labels to encourage EMSs.
- The agencies should consider targeting planning incentives to certain critical areas (e.g. an impaired watershed with TMDL concerns)

Information and Education

Combined with research and field testing, information and education (I & E) can serve a valuable role in transferring information about new practices and technologies. This approach has a long tradition of acceptance in the agricultural community. The effectiveness of farmer education efforts can be increased by maintaining long-term relationships with farmers. For example, sustained relationships are a key to the long-term success of nutrient management. Farm group involvement through mentoring and other efforts has the potential to create a sense of ownership in the solutions to this problem.

For proven systems and established practices, we need to look at outreach and education to disseminate useful information. For example, more farmers may consider composting if they knew more about the process, benefits, and costs. Education efforts also can shed light on new opportunities such as grazing, manure sharing, and insurance discounts. They might be used to disseminate the growing body of information about source reduction—reducing phosphorus in feed, separating liquids from solids, reducing water in the system. Budget cuts have diminished statewide capacity to carry out outreach and education. Print materials and web-based delivery offer cost-effective options for communicating with farmers and other audiences, but web-based programs may reach a narrower audience and have other limitations.

Beyond the usual methods, we can look at innovations in education that take advantage of new technologies. A case in point is a spreading advisory tool developed in Oregon to allow farmers to identify and avoid high risk conditions for spreading manure.

Regular training is critical for those who apply manure. The training should be dynamic and current, including new components each year, rather than formal and repetitive. A statewide certification or licensing program has the advantage of ensuring full participation and consistency in training.

A well-rounded education effort includes outreach to the non-farm public. Public recognition programs such as River Friendly Farmer Awards acknowledges farmers for good performance and increase public awareness of farmers as good stewards.

Recommendations

- DATCP and DNR should reaffirm the importance of I & E efforts, and work with a coalition of interested parties to identify key activities such as nutrient management training and secure adequate support for these activities particularly at the county level.
- DATCP and DNR should work with UWEX, county governments and others to pursue a manure spreading advisory system that may take the form of a web-based risk assessment tool to warn farmers about specific weather-related hazards such as predicted rain events. This tool should be developed and implemented with a full understanding of its limitations (e.g. farmers still need to use common sense).
- DATCP and DNR should work with UWEX and others to pursue a statewide notification program to alert farmers concerning high risk spreading conditions such as melt periods and dry weather. Different media including radio broadcasts (including daily market reports), websites, and email could be used for making notifications.
- I &E efforts should be enhanced by developing long-term relationships with farmers. New approaches that engage the agricultural community should be considered such as a mentoring program that taps farmers who have already successfully implemented their nutrient management plans as a resource for other farmers.
- The state should invest in programs that promote proven systems and established practices such as composting and grazing that incorporate less risky, manure handling methods.
- I & E efforts should disseminate existing information more widely to promote manure brokering (exchange of manure), insurance discounts, grazing, and reduction of phosphorus in feed.
- I & E efforts should embrace innovative practices and technologies, including source reduction through reduction of phosphorus in feed, separation of liquids from manure solids, and reduction of water in the manure handling system.
- State agencies and UWEX should develop a formal training program related to manure hauling and management. This could be part of a mandatory licensing or certification program for professional manure haulers. Medium and large livestock operations might be required to participate in training while participation by others would be voluntary.
- I &E efforts should be improved by making more effective use of print- and web-based materials. Improvements may include increasing the quantity and quality of material on manure management, developing informational materials on new research findings from the Discovery Farms and other sources, involving DATCP and DNR in the distribution of materials, using the web as appropriate but not relying on this mechanism, understanding the needs of the audience and using the most effective channels for communication, and considering new avenues to deliver information such as milk inspectors.
- The state should engage the agricultural community in education and training of farmers, and include information on the natural resource impacts of excess nutrients and manure.

- I & E efforts need to reach the non-farm public and should include farm visits particularly for agency staff, public recognition programs, and urban pollution prevention.

Monetary and non-monetary incentives

Incentives are an accepted tool to encourage farmers to adopt conservation practices and make positive changes in management. Existing federal and state cost-share dollars are inadequate to meet the need for managing land application of manure. Of specific concern, cost-sharing is required for enforcing nutrient management and other agricultural performance standards on existing farms that are not required to obtain a WPDES permit. While incentives vary in their effectiveness, they merit serious consideration in developing state responses to manure runoff incidents. The Task Force considered traditional and innovative methods to fund incentive payments.

The significant benefits associated with nutrient management plans warrant serious consideration of new funding to provide more cost-sharing. However, there is merit in seriously exploring non-monetary incentives, particularly in light of the shrinking budgets at all levels of government. The *Green Tier* program provides non-monetary incentives for DNR-permitted entities including livestock operations to adopt higher levels of environmental performance. This program may also serve a model for providing protection and incentives to other livestock operations.

The protection of limited enforcement is an incentive that merits further consideration. Properly designed, limited enforcement could serve as an inducement for many farmers to adopt key practices such as nutrient management. Both agriculture and environmental representatives indicated a willingness to pursue this concept provided key questions are resolved. Details that must be worked out include the specific conditions that would trigger this protection. What criteria regarding protective management practices must a farmer meet to be eligible for limited enforcement? What is the nature of the protection that will be afforded farmers? Should the level of the protection vary depending on the farmer's level of commitment? Are the protection and incentives afforded farmers commensurate with the benefits conferred upon the public? Is there merit in providing protection through an industry risk pool that helps eligible farmers pay for runoff-related damages?

Recommendations

- DATCP and DNR should work with others to increase cost-share funding for nutrient management plans, as more specifically detailed in an earlier recommendation, because of the significant benefits associated with nutrient management plans.
- DATCP and DNR should actively work to establish limited enforcement protection for farmers that meet standards for superior environmental performance. A regional pilot program should be established to develop, test and evaluate implementation protocols.
- DATCP and DNR should work with the agricultural community, environmental interests and others to identify new funding source(s) from farmers, consumer

- groups and/or industry groups to pay for (a) remediation of contaminated wells, habitat and other impacts of manure runoff events, (b) implementation of preventive measures, and (c) related research.
- Insurance discounts and other incentive programs already in place should be more widely publicized through information and education efforts.
 - State and federal grant programs should reward farmers with high levels of environmental performance by awarding them additional points when they apply for cost-share grant funds.

Emergency management

Careful planning and compliance with best management practices can minimize manure runoff risks; however, these actions do not entirely eliminate the risk. Farming is subject to variables such as weather that farmers cannot always anticipate and control. Planning and other emergency management measures are necessary to respond to unforeseen events.

These measures could take the form of emergency storage and disposal options, emergency planning, and expanded practices specifically designed to manage emergencies. Options that involve the transportation and regional storage of manure raise issues involving bio-security, hauling costs, and liability. Public wastewater treatment facilities may be a resource in an emergency, but they have wasteload restrictions that might preclude their acceptance of manure. Under current law, it is not an option to use lands set aside in the conservation reserve program for emergency manure applications. Farmers can use private arrangements with other farmers to transfer manure in emergencies. Private transactions would be facilitated by a list of farmers who were available to accept manure.

The state can develop a framework and guidance for emergency response planning that covers both farms and local governments. Counties can develop emergency response systems that include “911” hotlines and make advance arrangement to coordinate private and public responders. Emergency response plans allow farmers to plan in advance how they will respond in the event of a runoff incident or other emergency. Emergency response plans identify who the farmer will contact and what procedures the farmer will follow. In these plans, farmers need to consider what aspects of an incident they can manage, and when they need to secure assistance to manage conditions beyond their skills and resources.

Research can yield new practices and technologies to limit the impact of runoff events. It is important that we continue to evaluate new options, identify successful tools, and share proven technologies with farmers and others. Polymers have shown potential as an emergency management tool, and are becoming more available commercially.

Recommendations

- DNR and DATCP should strongly encourage and support counties in developing emergency response systems and farmers in preparing individual emergency response plans. While education and incentives are important steps, the task force

- has not achieved consensus on the role of regulation in securing compliance among individual farmers.
- DATCP and DNR should engage the agricultural community and local governments in the task of developing and maintaining lists that identify private and public storage and treatment facilities that might accept manure in the event of an emergency.
 - DATCP and DNR should engage the agricultural community and local governments in the tasks of identifying and expanding emergency storage capacity. This might include regional storage facilities and options to use private storage facilities.
 - DNR and DATCP should work with the agricultural community and others to facilitate private arrangements among farmers to transfer manure in the event of emergencies.
 - The state should support research and development of new management and technological options, identifying successful tools and sharing proven approaches with farmers and others.

Regulation

Under the current state nonpoint law, most farms are entitled to cost-sharing if they are required to comply with nutrient management and other agricultural performance standards. Livestock operations over 1000 animal units are the exception; they are required to have nutrient management plans and meet other standards as a condition of their DNR permits issued under NR 243, Wis. Admin. Code. State and local governments are proposing new regulations that will specifically address manure runoff incidents. Proposed changes to NR 243 will mandate storage for manure and restrict manure spreading during winter months. The proposed livestock facility siting rules (ATCP 51, Wis. Admin. Code) will require farmers to implement nutrient management plans. Both ATCP 51 and NR 243 include a requirement for emergency response plans for operations covered by these rules.

Several counties are proposing ordinances that specifically regulate winter spreading of manure. Local officials are considering specific provisions that:

1. restrict winter spreading in high risk areas identified by farmers in conservation plans,
2. limit the volume of manure that can be applied on frozen and snow-covered ground,
3. prohibit manure application near wells and other sensitive areas,
4. require conservation practices to reduce runoff risks,
5. mandate recordkeeping of manure applied during the winter months, and
6. impose manure storage requirements.

Mandating manure storage for livestock operations not permitted by DNR is problematic for the following reasons. If followed, this approach would require unrealistic levels of cost-share funds. While required storage may help farmers avoid spreading at undesirable times, mandatory storage can also cause other problems (e.g. spreading very large volumes in the spring). In addition, farmers with storage often run out of winter storage capacity as they add animals. In the end, more stored manure will increase the amount of manure that must be applied during short windows of time. This has implications for

town roads that may not have capacity to handle this traffic. On the other hand, livestock producers with storage have more manure management options than those without storage. Ultimately the solution turns on the management of manure—some farmers have a safe land base for spreading, others do not. Farmers need to take responsibility because they must bear the cost if they cause environmental harm.

Current regulations such as NR 243 require record keeping. Permit holders must have records related to production area structures and management including the emptying of storage structures, responses to manure storage overflows, corrective actions including emergency responses. They must follow record keeping requirements for land application activities including application rates and weather conditions. Other record keeping requirements cover sampling and inspections. Beyond NR 243, record-keeping requirements may be necessary to implement basic practices such as winter spreading plans and emergency response plans

In addition to following current regulatory paths on state and local levels to address manure runoff incidents, the task force sees the need to consider new regulation in the following area. Currently, Wisconsin has a voluntary certification program for manure haulers operated by their professional organization. Other states impose requirements for licensing and certification of haulers. These licensing and certification programs are usually operated by state departments of agriculture, include training requirements, and may require participation of others in addition to those who haul for hire. The majority of Wisconsin haulers work for CAFOs (operations over 1000 animal units), which are regulated by DNR. Contract haulers handle approximately 1/3 of the manure in the state, but this percentage is declining somewhat as CAFOs elect to haul their own manure. Certified applicators have a set protocol to use for notification and investigation of runoff events (investigations done by Professional Nutrient Applicators Assoc. of WI); however those guidelines cannot be used for individual farmers because there is no overriding organization to conduct those investigations.

Recommendations

- DATCP and DNR should work with the agricultural community, environmental interests and others to support additional cost-sharing funds to implement existing state regulatory requirements for the implementation of nutrient management plans on livestock operations.
- DNR should be directed to finalize a water quality criteria phosphorous standard.
- State agencies should evaluate approaches to simplify and streamline regulatory processes, including fast-tracking review and permitting related to innovative technologies.
- DATCP should consider developing a statewide certification or licensing program for manure haulers that builds on the professional certification program, giving careful consideration to the scope of requirements imposed, fees or other funding mechanisms for the program, and the class of persons to be regulated (e.g. contract haulers, medium and large livestock operators).
- DATCP should evaluate how farmers can participate in training and education efforts related to a statewide certification or licensing program for manure haulers.

- DNR and DATCP should provide timely responses to proposed ordinances submitted by local governments for state review and approval.
- DNR and DATCP should encourage emergency risk assessments for all livestock operations as a proactive approach to reducing the risk of acute manure runoff events.

Protection of drinking water and groundwater

Land-applied manure has contaminated private drinking water wells. In the past, victims of well contamination have not had adequate remedies for compensation. In terms of private lawsuits, they have been hampered by litigation costs and problems in proving causation. Wisconsin's Drinking & Groundwater program has a well reimbursement program that covers chemical contamination but not bacterial contamination (and thus excludes manure contamination). With advances in water testing, we can better pinpoint the cause of well contamination. Should well owners be afforded state compensation for manure contamination, the administering agency needs to consider the condition of the well and other factors. The interests of the farm community are advanced if victims of well contamination have recourse to a simple and effective way to address their problems. The DNR's well compensation program, including its funding mechanism, could accommodate claims from landowners with manure-contaminated wells. In addition to the recommendations below, DNR also recommends the following to reduce groundwater and water supply risks from land-applied manure: a) identify minimum separation distance between wells, groundwater, karst features, bare rock, and other direct conduits to groundwater; b) limiting spreading on frozen ground in vulnerable areas, c) controlling application of manure within pre-identified source water protection. DNR is also interested in improving techniques and methodologies for identifying manure-contaminated wells and for identifying specific manure sources of such contamination.

Recommendations

- DNR should revise its well compensation program to provide funding for owners of wells contaminated by manure runoff events. This process must include a determination of funding necessary to pay potential claims as well as funding for abandonment of unused wells.
- DNR should work with DATCP, the agricultural community, and others to ensure adequate funding for a compensation program.
- Any new or revised program should resolve administrative issues including investigative protocols to verify claims, and compensation for substandard wells that become contaminated.